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AMSAT NEWS SERVICE
ANS-078

ANS is a free, weekly, news and information service of AMSAT North America,
The
Radio Amateur Satellite Corporation. ANS reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in
designing, building, launching and communicating through analog and digital
Amateur Radio satellites.

Please send any amateur satellite news or reports to:

ans-editor@amsat.org

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* Volunteers are needed to help at the AMSAT booth at Dayton. Gould *
* WA4SXM, is looking for volunteers to help man the AMSAT booth dur- *
* ing the 2012 Hamvention. People are needed all 3 days for 2 hour *
* shifts. Please send the days and times you are available to help *
* as well as how many shifts you are willing to work via e-mail to *
* wa4sxm at amsat.org. *
* Monitor http://www.amsat.org/amsat-new/hamvention/2012/Dayton.php *
* for the latest AMSAT at Dayton news and developments *
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ANS-078 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 078.01
From AMSAT HQ SILVER SPRING, MD.
March 18, 2012
To All RADIO AMATEURS
BID: $ANS-078.01

IARU Announces New Amateur Satellite Frequency Coordination Form

Frequency coordination for amateur radio satellites is provided by the International Amateur Radio Union (IARU) through its Satellite Advisor, an official appointed by the IARU Administrative Council, its top policymaking body. This post is currently held by Hans van de Groenendaal, ZS6AKV.

Hans describes his role, "The IARU Satellite Advisor is assisted by an Advisory Panel of qualified amateurs from all three IARU Regions. The panel meets regularly via Skype to consider amateur satellite frequency coordination requests for satellites planned for operation on frequencies in the amateur service. The panel members often provide advice and assist satellite builders with the selection of the best possible frequencies to meet the objectives of their mission."

The Amateur Satellite Frequency Coordination request form has been updated (Version 27) and is available for download from: http://www.iaru.org/satellite.

On the IARU web satellite page there are also available a number of guideline documents which will assist satellite builders, including a document on the ITU requirements for Amateur Radio Satellites.

The list of amateur radio satellites coordinated by the IARU is posted on-line at: http://www.amsat.org.uk/iaru

[ANS thanks Hans van de Groenendaal, ZS6AKV for the above information]

Watch for Packets from US Naval Academy Ice Goat 1 Buoy

This month a group of Oceanography and Aeronautical engineering students from the US Naval Academy, led by Lt. Commander John Woods, a military instructor in oceanography, deployed a buoy rigged to monitor weather in the harsh conditions of the arctic. They delivered the "Ice Goat 1," buoy to the northern part of Alaska traveling by plane, then helicopter and finally snowmobile to the arctic ice off of the coast of Point Barrow, Alaska. Once the ice melts the bouy will begin its sea voyage.

Ice Goat 1 also carries an APRS beacon operating on 145.825 MHz. The position packets can be relayed via the ISS digipeater. However, the ISS only rises 1.5 degrees above the horizon at arctic latitudes. Reports of direct reception of the 145.825 MHz beacon are sought from any lucky Alaskan, and perhaps eventually Pacific Northwest amateur radio stations (depending on ocean current) who may be in range. Please send reports of reception to: wb4apr@amsat.org.

This week, W3ADO, the US Naval Academy Amateur Radio Club has posted a notice via the ISS digipeater:

W3ADO]APRS,RS0ISS-3*,qAR,N4XS-3::BLN1 :APRS Arctic Buoy in Barrow Alaska. Watch for pkts!

The science mission of this buoy will broadcast webcam images and measure a variety of environmental parameters including air temperature, barometric pressure, and possibly under ice acoustics. As the buoy collects information about the surrounding parameters all data will be compiled on an internal data logger and transmitted back to USNA using an Iridium satellite data link.

[ANS thanks Bob Bruninga, WB4APR for the above information]

India HAMSAT VO-52 Recovery Successful

A report received from the ISRO Satellite Centre at Bangalore, India on March 14 says the HAMSAT VO-52 is back on the air. Mani, VU2WMY wrote, "The commands to 'Turn On' the PE1RAH Dutch transponder was successfully sent during 14:00 UT 35 deg ascending node pass over Bangalore, India. The commands were successfully received, acknowledged and confirmed by telemetry. The beacon signal was heard loud and strong here at Bangalore."

Stations in Europe and North America reported good signals from VO-52 immediately after the transponder was activated. The beacon was heard with two-way contacts completed through the transponder.

The HAMSAT team requests detailed initial reports be sent to:: tprangan@istrac.org and a copy to wmy@isac.gov.in would be greatly appreciated.

HAMSAT VO-52 frequencies are:

Uplink: 435.2250 - 435.2750 MHz SSB/CW
Downlink: 145.9250 - 145.8750 MHz SSB/CW
Beacon: 145.8600 MHz CW

The CW beacon is sending: HI HI HI THIS IS VU SAT WITH THE DUTCH MODE UV TRANSPONDER MADE BY WILLIAM LEIJENAAR 73 DE PE1RAH

Upon successful recovery of VO-52 Mani, VU2WMY sent the following message on behalf of the HAMSAT team:

> I take this opportunity to sincerely thank each and every user and well wishers, who have been following and monitoring closely all those events and activities that followed since the interruption on 28th February 2012.
>
> Thanks for all those encouraging and supporting expressions!
>
> The initial telemetry reports indicated all the crucial and critical parameters to be normal and satisfactory and we do hope 'HAMSAT VO-52' would be available with much stronger power. The overall spacecraft health is in 'Excellent Condition' and all that we need to do is to monitor the transponder parameters.
>
> 14:05 UT on 14 March was a moment of great satisfaction and joy to all of us here in bringing 'HAMSAT VO-52'back to life. It also gives us great pleasure to note that 'HAMSAT VO-52'from India/ISRO has a earned a name in the history of 'Amateur Radio Satellites'.
>
> On behalf of everyone, I take this opportunity to sincerely thank particularly, Mr. Parimalarangan-Operations Director for his hard work and great efforts besides his exemplary technical competence and skills exhibited in recovering back 'HAMSAT VO-52'.
>
> Also my sincere thanks to Mission Director Mr. R. Suresh and the entire 'HAMSAT VO-52' Mission Management and Project teams for all the support, encouragement and recognition provided to 'Amateur Radio World'.
>
> My Good wishes to VO-52 and the transponders on-board for a 'Healthy and Long Life'. My Good wishes & greetings, once again to William, PE1RAH.

[ANS thanks Mani, VU2WMY, Secretary & Station-In-Charge of the Upagrah Amateur Radio Club VU2URC at the ISRO Satellite Centre for the above

information]

International Effort at Sea Gets UT1FG/MM Back on Satellites

This week John Papays, K8YSE shared an international amateur radio goodwill success story in getting Captain Yuri Bodrov, UT1FG/MM back on the air after a power supply failure at sea.

UT1FG/MM was enroute aboard his cargo ship from a Pacific port in Nicaragua bound for Montreal Canada via the Panama Canal and into the Gulf of Mexico. Yuri, an avid 6 meter and satellite operator, reported that his 12 volt power supply had failed shortly after leaving port.

John wrote, "The bad news was relayed amongst those of us who had been following Yuri and working him in wet grids as he traveled. Brainstorming started with ideas tossed around via emails. One idea was to buy a power supply and ship it Fedex to Yuri's agent in Panama and hope it got there in time. But Yuri felt that there would not be enough time for that to happen. We only had a few days."

Searching with Google and QRZ achieved contact with Captain Manolis Joannou, HP1CQ, also a sea captain and president of the Panama Canal Amateur Radio Association. Manolis was able to find a power supply that could operate off the 220 VAC ship mains and provide 12 volts to Yuri's IC-706 radio.

Captain Manolis made his way via a motor launch to Yuri's ship and hand delivered the new power supply. The two Captains spent an hour together before parting. Yuri was back on the air, working satellites from the Gulf of Mexico.

For a full story, complete with photos visit:
http://www.papays.com/sat/power/ut1fgpanama.html

[ANS thanks John Papays, K8YSE for the above information]

Open Source CubeSat Space Protocol Flight Test Aboard GOMX-1

Cubesat Space Protocol (CSP) is a small network-layer delivery protocol designed for Cubesats. The idea was developed by a group of students from Aalborg University in 2008. The protocol is based on a 32-bit header containing both transport and network-layer information. Its implementation is designed for, but not limited to, embedded systems such as the 8-bit AVR microprocessor and the 32-bit ARM and AVR from Atmel. The implementation is written in GNU C and is currently ported to run on FreeRTOS or POSIX operating systems like Linux and BSD.

GOMX-1, a 2U CubeSat designed and built by more than 15 students at Denmark's Aalborg University is expected to launch in late 2012 into a near sun syncronous orbit on a DNEPR rocket from Yasny in Russia with a number of other amateur radio satellites.

The GOMX-1 mission will qualify a number of satellite subsystems in space, providing extensive in-flight data. A camera payload will take

color images of the Earth and an experimental Software Defined Radio receiver will be carried and its performance characterized. The mission will also test the use of the open source Cubesat Space Protocol for a complete mission including the space link.

GOMX-1 plans to use GMSK telemetry with selectable 1k2/2k4/4k8/9k6 rates on UHF with approx 28dBm power to a deployed antenna.

For more information refer to these web pages:

GOMX-1 web page: http://gomspace.com/

Cubesat Space Protocol: http://code.google.com/p/cubesat-space-protocol

Gunter's Space Page provides a calendar of planned launches for 2012: http://space.skyrocket.de/doc_chr/lau2012.htm

[ANS thanks the GOMX-1 Team at Aalborg University for the above information]

RAX-2 Amateur Radio Cubesat Scientific Success

The University of Michigan RAX-2 amateur radio cubesat has achieved success in detecting the communication-disrupting anomaly in the upper atmosphere it was designed for.

On March 9, Matt Bennett KF6RTB reported on behalf of the RAX-2 team, "This is unbelievable!! After more than three years of hard work and dedication by my team and professor at Michigan, our chief scientist confirmed today that the RAX-2 spacecraft we designed, built, and launched into space has detected the communication-disrupting anomaly in the upper atmosphere that we've been looking for!"

The primary objective of the mission is to use the onboard radar receiver in conjunction with a powerful radar station in Alaska to study the formation of a plasma anomaly known for causing the scintillation of radio signals in the UHF and higher bands. This effect is known to inhibit our space radar tracking capabilities and ground-space communications. Studying this anomaly in this bi-static radar configuration (ground based transmitter, space-base receiver) will provide scientists with a better understanding of these anomalies that has not been achievable with ground radars alone.

Mark concludes, "The RAX Team would like to acknowledge and say thank you to the amateur radio satellite community for all of their support on this mission. We've really enjoyed interacting with fellow operators while collecting and analyzing telemetry. We've also learned a great deal about satellite operations from each other."

RAX-2: 437.345 MHz, 9600 bps GMSK http://rax.engin.umich.edu/

Mission Science Operations http://rax.sri.com/

RAX on Facebook http://www.facebook.com/RadioAuroraExplorer

[ANS thanks Mark Bennett KF6RTB and the RAX-2 team for the above information]

Satellite Shorts From All Over

+ A team of 10 operators, from the Aguas-Calientes Amateur Radio Club will activate Isabel Island, grid DL71, using the callsign XF1AA. The planned dates are March 16-21. Ismael, XE1AY, is one of the operators and is active on the satellites. If you should hear Ismael on the birds, please give him the air time to work as many as he can. (OPDX Bulletin 1050 & K8YSE)

+ Magyar OSCAR-72 (MO-72) has made the very first Hungarian photographs from space. Please visit: http://tinyurl.com/MO72-FirstPhotos (cubesat.bme.hu)

+ Mark Hammond, N8MH is hosting an AMSAT table at the RARSFEST in Raleigh, NC on Saturday, April 7. Mark is looking for volunteers to assist. If you can help with this AMSAT publicity effort contact Mark at marklhammond@gmail.com.

+ Plan ahead for August: EMike McCardel, KC8YLD is looking for volunteers for the AMSAT presence at the Ohio State ARRL Convention which will be held Saturday August 4, 2012 in conjunction with Voice of Aladdin's Columbus Hamfest. Plans are being formed for a display table, satellite demos, and a speaker is needed for a satellite forum. If you are interested in helping out or would like to propose a forum talk please contact EMike at: kc8yld@amsat.org

+ Paul, 2E1EUB says his next mobile satellite operations as 2M1EUB from his van will be starting March 24 for 7 days from the east coast of Scotland. Main operations are planned for AO-7 Mode A/B and other satellites as available. Paul will post his latest information on amsat-bb and also on the lookup at QRZ.com for 2M1EUB.

+ Also Paul, 2E1EUB will be guest speaker at the Telford and District Amateur Radio Society (TDARS) on Wednesday, March 21, where he will give a talk about amateur radio satellites. In 2011 Paul was awarded the prestigious Louis Varney Cup for Advances in Space Communication, which was presented to him at the Telford Hamfest. More information is posted on Southgate: http://tinyurl.com/Telford-Talk

+ ISS astronaut Don Pettit, KD5MDT demonstrates physics in space in several videos posted on the 'Science off the Sphere' web pages. This is a partnership between NASA and the American Physical Society. Watch at: http://www.physicscentral.com/sots

+ Enjoy a flight over the northern lights aboard the ISS when you watch the video at: http://tinyurl.com/ISS-FlyOverAurora (SpaceDaily.com)

+ Central States VHF Society Conference is planned for July 26-29 in Cedar Rapids, Iowa. A conference hotel rate of $93 per night is being arranged. More information will become available as the web page at http://www.csvhfs.org/ is updated.

+ The 50 MHz and Up Group is hosting this year's Microwave Update Conference from October 18 to 21 in Santa Clara, CA. Check their web at: http://www.microwaveupdate.org for more info as it becomes available. Abstracts for papers, or requests for more information can be sent by e-mail to: mud2012papers at gmail dot com

+ Congratulations to Rick Tejera, K7TEJ on earning VUCC Satellite

Award #227! Rick says, "Thanks to all who worked me over the past two years to get me here."

[ANS thanks everyone for the above information]

ARISS Status Report - 12 March 2012

1. Upcoming School Contacts

An ARISS contact has been scheduled for Istituto Tecnologico Statale Trasporti e Logistica "Leone Acciaiuoli", Ortona, Italy on Sunday, March 18 at 11:31 UTC. The Ortona Maritime Institute "Leone Acciaiuoli" (I.T.N) is a technical high school that prepares the student for a career as a merchant ship officer or to continue his university studies in the field of engineering disciplines. Among the subjects taught at the school are navigation, astronomy, celestial navigation, satellite navigation, telecommunications (including satellite telecommunications), mathematics and physics. Since 1991, the Institute has taken part in the "International Day of Planetaria" which provides an opportunity for educating the public in the areas of planetaria, science and technology. On this day, the public is able to visit the Planetarium, laboratories, astronomical telescope and other astronomical equipment. The ARISS contact will be held as part of the day"s activities.

2. California Students Radio Dan Burbank on Space Station

On Monday, March 5, Dilworth Elementary School in San Jose, California participated in an Amateur Radio on the International Space Station (ARISS) contact with Dan Burbank, KC5ZSX. Burbank fielded 19 questions put to him by the students about the challenges encountered while living in space. The contact took place during the NASA Destination Station exhibit at The Tech Museum located nearby and complemented lessons on Science Technology, Engineering and Math (STEM).

3. Astronaut Andr" Kuipers Answers Children"s Questions via ARISS

An Amateur Radio on the International Space Station (ARISS) contact was held between Andr" Kuipers and school children at the Space Expo in Noordwijk, Netherlands on Tuesday, March 6 via station ON4ISS in Belgium. The

radio
activity was part of an educational program around Kuipers' mission
Spaceship
Earth which targets youth who are 10-14 years of age. Part of this
program
consists of mission assignments that Kuipers gives to Dutch
schoolchildren.
The
winners of each challenge were invited to the radio contact. Other
activities
included lessons and experiments.

4. Hams who Experimented with ARISSat Make the News

Farrell and Jeff Winder, the father and son who helped in the
development of
SuitSat-1, made the news recently when they used
ARISSat's transponder and after
several tries, successfully sent and received a picture of Farrell
Winder's
automobile license plate. Community Press posted
the story, 'Father, son team up
in 'outer space'.' See:
http://communitypress.cincinnati.com/apps/pbcs.dll/article?AID'2/2012
0301/
NEWS
/303010057/

[ANS thanks Carol, KB3LKI, for the above information]

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In addition to regular membership, AMSAT offers membership in the
President's Club. Members of the President's Club, as sustaining
donors to AMSAT Project Funds, will be eligible to receive addi-
tional benefits. Application forms are available from the AMSAT
Office.

Primary and secondary school students are eligible for membership
at one-half the standard yearly rate. Post-secondary school students
enrolled in at least half time status shall be eligible for the stu-
dent rate for a maximum of 6 post-secondary years in this status.
Contact Martha at the AMSAT Office for additional student membership
information.

73,
This week's ANS Editor,
Lee McLamb, KU4OS